

REMARKS:

In the foregoing amendments, applicant's specification was amended to correct an editorial error. In claim 1, the amount of chromium (Cr) was changed from "4.0-10.0%" to "5.9-10.0%," which lower amount of Cr is described on page 14, table 1, No. 3, and elsewhere in applicant's specification disclosure. A typographical correction was made to claim 5. Claims 1-8 remain in the application for consideration by the examiner. A formal allowance of these claims is respectfully requested for at least the following reasons.

The Official action objected to the term "eutectoid" in the claims and the specification and stated that this term should be "eutectic." Applicant respectfully submits that the use of the term "eutectoid" is acceptable in the present claims and specification. For example, the Merriam-Webster Online Dictionary states that the words "eutectic" and "eutectoid" can be used interchangeably as an adjective or a noun. For such reasons, applicant respectfully requests that the examiner reconsider and withdraw this objection to the claims and specification.

In the foregoing amendments, the spelling of the word "wolfram" was changed to "tungsten" at page 7, line 3, of the specification, as requested in the outstanding Office action. Accordingly, applicant respectfully requests that any objection to the specification based thereon be reconsidered and withdrawn.

Claims 1-4 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. patent publication No. US 2003/0091459 A1 of Harris *et al.* (Harris). This rejection is set forth on pages 4-7 of the Official action. Claims 5-8 were rejected under 35 U.S.C. §103 as being unpatentable over Harris in view of the allegedly admitted prior art (AAPA) at line 16-20 in the background section of the specification of the present application. This rejection appears on pages 7 and 8 of the Official action. Applicant respectfully submits that the inventions defined in

claims 1-8 are patently distinguishable from the teachings of Harris alone or taken together with the AAPA for at least the following reasons.

The teachings of Harris proposed narrow ranges for the alloying elements required therein. For example, Harris requires 4.7-4.9% Cr, whereas present claim 1 requires 5.9-10% Cr. Since the teachings of Harris propose amounts of chromium (Cr) completely outside the range set forth in the present claims, applicant respectfully submits that these teachings cannot motivate one of ordinary skill in the art to the alloy defined in the present claims including amounts of Cr completely different from those proposed therein. For this reason alone, applicant respectfully submits that the inventions defined in claims 1-8 are patently distinguishable from the teachings of Harris alone or taken together with the AAPA. Therefore, applicant respectfully requests that the examiner reconsider and withdraw the rejections of the present claims over these teachings.

In the prior art rejections, the Official action took the position that it is the applicant's burden to establish that the amount of Mo, Re and Hf included in the alloy of Harris are excluded from the present claims by the transitional phrase "consisting essentially of." Applicant respectfully submits that the presently claimed invention is patently distinguishable from Harris because of the amounts of Re required therein. In addition, applicant respectfully submits that the teachings of Harris, itself, establish that the amounts of Re required therein necessarily affect the basic and novel characteristics of the nickel-based superalloy proposed therein, thereby satisfying any burden of the applicant to prove the same. For example, paragraph [0021] of Harris explains how about 2.9-3% Re provides stress-rupture properties without promoting the occurrence of deleterious topologically-close-pack (TCP) phases (Re, W, Cr rich), providing the other elemental chemistry is carefully balanced. Applicant respectfully submits that a person

skilled in this art reading the teaching of Harris would understand that the amounts of Re, which are required therein, materially affect the basic and novel characteristics of the superalloy defined therein or the alloy presently claimed. For this reason, the transitional phrase "consisting essentially of" in applicant's claims distinguishes the alloy of applicant's claims from that proposed by Harris.¹

Additional reasons that the transitional phrase "consisting essentially of" in present claim 1 excludes, for example, the Re required in Harris include the following:

1) The alloy of Harris contains 2.8-3.1% Re as an essential element. Within the teachings of Harris, it is necessary to add Re to the alloy proposed therein for the purpose of improving rupture property. Therefore, it cannot be obvious to remove Re from the alloy proposed by Harris within the meaning of 35 U.S.C. §103. On the other hand, the present claimed alloy contains no Re, but achieves high strength.

2) Re is a very expensive metal. For this reason, the presently claimed invention has an advantage over the alloy proposed by Harris, simply because Re is excluded.

3) Due to addition of a certain amount of Re in Harris, the Cr-content therein is limited to 4.9% at the highest. This is because additional amounts of Re will cause formation of the harmful TCP phase. In the presently claimed alloy, which does not require Re, may contain higher amounts of Cr, and thus, oxidation resistance of the alloy can be improved.

¹ The transitional phrase "consisting essentially of" limits the scope of a claim to the specified materials or steps "and those that do not materially affect the basic and novel characteristic(s)" of the claimed invention. *In re Herz*, 537 F.2d 549, 551-52, 190 USPQ 461, 463 (CCPA 1976). "A 'consisting essentially of' claim occupies a middle ground between closed claims that are written in a 'consisting of' format and fully open claims that are drafted in a 'comprising' format." *PPG Industries v. Guardian Industries*, 156 F.3d 1351, 1354, 48 USPQ2d 1351, 1353-54 (Fed. Cir. 1998). See also *Atlas Powder v. E.I. duPont de Nemours & Co.*, 750 F.2d 1569, 224 USPQ 409 (Fed. Cir. 1984); *In re Janakirama-Rao*, 317 F.2d 951, 137 USPQ 893 (CCPA 1963); *Water Technologies Corp. vs. Calco, Ltd.*, 850 F.2d 660, 7 USPQ2d 1097 (Fed. Cir. 1988); See also *In re Janakirama-Rao*, 317 F.2d 951, 954, 137 USPQ 893, 895-96 (CCPA 1963).

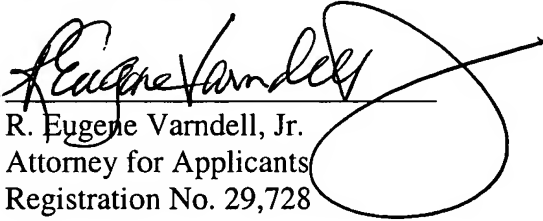
4) The alloy of Harris is useful for making a "single crystal casting." On the other hand, the alloy of the present invention is not intended to be use as a cast product of single crystal. Therefore, properties necessary in the alloy of Harris, such as those obtained by the inclusion of Re, and not necessary in the presently claimed invention.

For the foregoing reasons, applicant respectfully submits that the transitional phrase "consisting essentially of" distinguishes the presently claimed invention from the teachings of Harris, because it excludes the Re that is required in Harris. In accordance with the foregoing amendments and remarks, applicant respectfully submits that the presently claimed inventions are patently distinguishable from the teachings of Harris alone or taken together with the AAPA within the meaning of 35 U.S.C. §102 and/or 35 U.S.C. §103. Therefore, applicant respectfully requests that the examiner reconsider and withdraw the rejections of applicant's claims over these teachings as set forth in the outstanding Office action.

Based on the above, a formal allowance of claims 1-8 is respectfully requested. While it is believed that all the claims in this application are in condition for allowance, should the examiner have any comments or questions, it is respectfully requested that the undersigned be telephoned at the below listed number to resolve any outstanding issues.

In the event this paper is not timely filed, applicant hereby petitions for an appropriate extension of time. The fee therefor, as well as any other fees which become due, may be charged to our deposit account No. 50-1147.

Respectfully submitted,
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